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This application claims the benefit of provisional applications No. 60/124,967, filed 3-18-99 and No. 60/164,131 filed 11-8-99.

VASCULAR ENDOTHELIAL GROWTH FACTOR-X

5 The present invention is concerned with a novel vascular endothelial growth factor (VEGF) herein designated "VEGF-X", and characterisation of the nucleic acid and amino acid sequences of VEGF-X.

Introduction

10 Angiogenesis involves formation and proliferation of new blood vessels, and is an essential physiological process for normal growth and development of tissues in, for example, embryonic development, tissue regeneration and organ and tissue repair.

15 Angiogenesis also features in the growth of human cancers which require continuous stimulation of blood vessel growth. Abnormal angiogenesis is associated with other diseases such as rheumatoid arthritis psoriasis and diabetic retinopathy.

20 Capillary vessels consist of endothelial cells which carry the genetic information necessary to proliferate to form capillary networks. Angiogenic molecules which can initiate this process have previously been
25 characterised. A highly selective mitogen for vascular endothelial cells is vascular endothelial growth factor (VEGF) (Ferrara et al., "Vascular Endothelial Growth Factor: Basic Biology and Clinical Implications". Regulation of angiogenesis, by I.D. Goldberg and E.M. Rosen 1997 Birkhauser Verlag Basle/Switzerland). VEGF is a potent vasoactive
30 protein which is comprised of a glycosylated cationic 46-49 kd dimer having two 24 kd subunits. It is inactivated by sulfhydryl reducing agents and is
35 resistant to acidic pH and to heating and binds to immobilised heparin.